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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,796	06/19/2001	Kenneth LeVey	ITWO:0004 (12984)	4481

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EXAMINER

SCHIFFMAN, JORI

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 10/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/885,796

Applicant(s)

LEVEY ET AL.

Examiner

Jori R. Schiffman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 and 52-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 and 52-58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of the fastener in Paper No. 5 is acknowledged.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Figure 1 is missing reference numbers 16 and 22. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 16-38, and 50-56 have been renumbered 18-40 and 52-58. The dependent claims on each of these misnumbered claims must also be corrected.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 52-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 52 contains the phrase "pullout torque" in lines 1-2, which is unclear because the definition of torque according to Webster's Collegiate Dictionary Tenth Edition is "a turning or twisting force", and therefore cannot be "pulled" out. The examiner suggests using the phrase "removal torque".

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-8 and 52-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroyuki (5110245) in view of Gutshall (US 4069730).

Regarding claim 1, Hiroyuki discloses a threaded fastener with a head 2, a tip 3b, and a threaded shank extending between the head and the tip, the shank having a helical lead 4 including a plurality of bosses 4b separated by recessed bases 6, the bosses presenting a respective profile including a lead-in profile 6a in a direction toward the tip,

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a respective lead-out profile 6b in a direction toward the head, and a central section 4b of substantially uniform radial dimension. Hiroyuki fails to disclose each boss extending radially beyond adjacent bases. Gutshall teaches each boss 23, 25 extending radially beyond adjacent bases 22 (see Fig. 5) to produce a lower tapping torque (col. 4, l. 5-13). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to arrange the bosses and bases of Hiroyuki's screw thread in the manner disclosed in Gutshall in order to produce a lower tapping torque so less force is needed and therefore the screw will be easier to install.

As to claims 2-5, Hiroyuki discloses the respective lead-in and lead-out profiles 6a, 6b of at least two bosses differing from one another in length.

In regards to claims 6-7, Hiroyuki discloses at least two bases 6 differing from one another in length.

Referring to claim 8, Hiroyuki discloses for at least one of the bosses the lead-in profile 6a differs from the lead-out profile 6b.

Regarding claims 52-55, Hiroyuki discloses a threaded fastener comprising a head 2, a tip 3b, and a threaded shank extending between the head and tip. The value of the ratios of "pullout" or removal torque to insertion torque is intended use and would be dependent upon the material that the screw is used with.

8. Claims 9-40 and 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroyuki (5110245) in view of Gutshall (US 4069730) as applied to claims 1 and 52 above, and further in view of Thom (US 23409).

Regarding claims 9, 13-16, 18, 19, 25, 26, 32 and 33, Hiroyuki as modified by Gutshall discloses the claimed fastener as above, except for a second helical lead including a plurality of second bosses and bases. Thom teaches a screw with double lead threads which allow it to be installed with one-half the number of turns. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to add a second, identical thread to Hiroyuki's screw as modified by Gutshall as disclosed in Thom to allow it to be installed with one-half the number of turns, which would require less torque and force, and would therefore make the screw easier to install. Once the combination is made, the first bosses and second bases, as well as the second bosses and first bases, would be displaced from one another by 180° at generally corresponding locations along the shank, as disclosed in Gutshall.

As to claims 10-12, 20, 21, 24, 27, 28, 31, 32, 34, 35, 38, 56, and 57, Hiroyuki as modified by Gutshall and Thom discloses for at least two of the bosses the lead-in profile 6a differs from the lead-out profile 6b, and the respective lead-in and lead-out profiles 6a, 6b of at least two bosses differing from one another on each of the threads.

Regarding claims 17, 22, 29, and 36, Hiroyuki as modified by Gutshall and Thom discloses the first and second bases disposed along the shank to provide a substantially constant insertion torque.

Referring to claims 23, 30, and 37, Hiroyuki as modified by Gutshall and Thom discloses the lead-in profiles 6a of the bosses of the first and second leads being inclined less than the lead-out profiles 6b for the same bosses.

Referring to claims 39 and 40, Hiroyuki as modified by Gutshall and Thom discloses each of the first and second bosses 4a extending less than 90° around the shank.

In regards to claim 58, Hiroyuki as modified by Gutshall and Thom discloses the crests of the lead-in profiles being inclined at approximately 15° from the thread root, and the crests of the lead-out profiles are inclined at approximately 45° from the thread root.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited further to show the state of the art with respect to screws with interrupted threads in general: U.S. Pat. No. 4818165 to Shirai and GB 1120991 to Allsop.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jori R. Schiffman whose telephone number is 703-305-4805.

The examiner can normally be reached on M-Th, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on 703-308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-3179.

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Jori R. Schiffman  
Examiner  
Art Unit 3679

JS  
October 18, 2002



Lynne H. Browne  
Supervisory Patent Examiner  
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